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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/158,120	09/21/1998	LESLIE SID JOHNSON	469201-367	3563

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RAYMOND LILLIE
CARELLA BYRNE BAIN GILFILLAN
CECCHI STEWART & OLSTEIN
6 BECKER FARM ROAD
ROSELAND, NJ 07068

EXAMINER	
HILL, MYRON G	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/158,120	JOHNSON, LESLIE SID	
	Examiner	Art Unit	
	Myron G. Hill	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *12 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23- 34* is/are pending in the application.

4a) Of the above claim(s) *26, 30, and 34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23- 25, 27- 29, and 31- 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The Group and/or Art Unit of your application has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1648, Examiner Hill.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 January 2004 has been entered.

Newly submitted claims 26, 30, and 34 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The above referenced claims are directed to methods of preventing RSV infection in an animal which were restricted from the elected composition. See paper #9, mailed September 21, 1998.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26, 30, and 34 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Claims 23- 25, 26- 29, and 31- 33 are examined in this action.

Priority

The Office acknowledges the update of the first line of the specification.

Rejections Withdrawn

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 23- 25, 26- 29, and 31- 33 were rejected under 35 U.S.C. 102(a) as being anticipated by Tempest *et al.*

Applicant argues that the Declaration of Dr. Johnson shows that Dr. Johnson was the sole inventor and work performed by others was under the supervision of Dr. Johnson and shows diligence prior to the cited art.

Applicant's arguments were fully considered and found persuasive and Tempest *et al.* is no longer available as prior art.

Claim Rejections - 35 USC § 103

Claims 23- 25, 26- 29, and 31- 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tempest *et al.* and Beeler *et al.*

This rejection is withdrawn because Tempest *et al.* is no longer available as prior art.

Rejections Maintained

Claim Rejections - 35 USC § 103

Claims 23- 25, 26- 29, and 31- 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones *et al.* in view of Beeler *et al.*

Applicant argues that there is no motivation to combine the two references to obtain the antibodies of the current invention because Jones *et al.* does not modify the murine antibody in the same manner as the claimed invention, that the antibodies of Jones *et al.* lost some binding determinants, and that Jones *et al.* do not teach either antibodies against any RSV protein or that the Jones *et al.* antibodies are therapeutic. Applicant also argues that Jones did not use CDRs from both the heavy and light chains. Additionally, Applicant argues that Beeler *et al.* does not teach making humanized antibodies. Lastly, Applicant argues that there is no reasonable expectation of success especially for the claimed methods.

Applicant's arguments have been fully considered and not found persuasive.

Applicant is arguing the references, in part, individually and that is not the basis of the rejection.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Jones *et al.* teach that CDR regions from murine monoclonal antibodies can be grafted into a human backbone to make a useful antibody (abstract). It is clear in Jones *et al.* (page 525, column 1) that human antibodies have therapeutic potential in treating

human disease and murine antibodies present problems. Jones *et al.* further states that it was not surprising that their antibody lost determinants recognized by rabbit polyclonal serum and that even though there is loss of idiotypic determinants it "is reasurring in view of potential therapeutic applications" that the antibody retains binding to haptens (page 525, column 1, lines 23- 28). Jones *et al.* concludes that the CDR region is responsible for binding hapten (the antigen the antibody binds to) (page 525, column 1, lines 34- 36).

Jones *et al.* do not teach light chain replacement or RSV.

Beeler *et al.* teach that RSV is the most important cause of severe lower respiratory tract illness and that virus neutralization/protection *in vivo* correlates with antibodies to the F protein (page 2941, first and second paragraphs). Beeler *et al.* teach specific neutralizing monoclonal antibodies that bind to antigenic sites A and C (Table 1).

One of ordinary skill in the art at the time of invention would have known that there was a need to prevent RSV infection and that the neutralizing antibodies of Beeler *et al.* are important in protecting against RSV infection. Because Jones *et al.* teach that the CDR regions are important for binding, it would have been obvious to one of ordinary skill in the art to replace light chains as well as heavy chains because light chains are known to have CDR regions and because heavy and light chains bind antigen via the CDR region. Furthermore, claims 23, 27, and 31 do not require any specific heavy or light chain CDRs from the murine antibody. Jones *et al.* teach that chimeric antibodies can be made that overcome some of the problems with murine

antibodies and that they have therapeutic potential. Beeler *et al.* provide murine neutralizing anti-RSV F antibodies. One of ordinary skill in the art at the time of invention knowing the that the CDR regions of murine antibodies can be grafted into human antibodies would have been able to take the murine monoclonal antibodies of Beeler *et al.* and modify them as taught by Jones *et al.* with the expectation of success in creating an antibody that is an anti-RSV F neutralizing monoclonal antibody that binds to an antigenic site A or C. Jones *et al.* provides the motivation and expectation of success to make anti-RSV-F human-murine monoclonal antibodies because Jones *et al.* was able to make a human-murine monoclonal antibody with CDRs from a murine antibody.

The argument of no reasonable expectation of success for the claimed methods is not persuasive because the examined claims are drawn to products, not to methods of treatment.

Thus, it would have been *prima facie* obvious to use the method of Jones *et al.* to make human-murine antibodies with the CDRs of Beeler *et al.* with the expectation of success in producing a human-murine neutralizing antibody against RSV which is specific for the A or C antigenic sites of the F protein.

Claims 23- 25, 26- 29, and 31- 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Queen *et al.* (US 5693762) in view of Beeler *et al.*

Applicant asserts that Queen *et al.* teach making humanized antibodies from a mouse, human acceptor immunoglobulin heavy and light chain molecules, and antiviral antibodies; however, Queen *et al.* does not teach a neutralizing RSV F protein antibody.

Also, Applicant asserts Beeler *et al.* is only directed to murine antibodies and adds nothing to Queen. Finally, applicant states that the combination of Queen and Beeler do not suggest Applicant's invention to one of ordinary skill in the art with a reasonable expectation of success, especially for the claimed methods of preventing RSV infection.

Applicant further supplies Exhibits A-E (also called 1- 5) to show the commercial success of the invention of Dr. Johnson.

Applicant's arguments have been fully considered and not found persuasive.

First, the claims under consideration are not drawn to methods of preventing, so that argument is not commensurate with the scope of the claims.

Second, the exhibits are not supportive of the full scope of the presently claimed antibodies. The exhibits are not persuasive because they are drawn to one product and the claims are drawn to a whole genus, see MPEP 116.03(a). While there may be a long felt need for RSV treatments, the commercial success shown relates to only one product. The long felt need for treatment was well known in the art and would motivate one of skill in the art to make the product.

As admitted by Applicant, Queen *et al.* teach how to make the inventive antibodies but does not specifically disclose anti-RSV antibodies.

Beeler *et al.* teach RSV neutralizing antibodies that bind to the antigenic sites A and C, and the importance of RSV-F neutralizing antibodies.

One of ordinary skill in the art at the time of invention would have been motivated to use the method of Queen *et al.* to make a human murine antibody directed against RSV using the CDRs of the murine monoclonal antibody of Beeler *et al.* knowing that Queen *et al.* teach success in making human-murine antibodies and knowing that Beeler *et al.* teach the importance of RVS and the neutralizing qualities of the murine monoclonal antiRSV-F antibodies that they made. One of ordinary skill in the art at the time of invention would choose the CDRs of Beeler *et al.* because there was a need to prevent and/or treat RSV infections and that Beeler *et al.* teach the importance of the RSV F antigenic sites in neutralizing antibodies. Queen *et al.* teach the therapeutic value of antibodies and that human-murine chimeras have advantages (column 16, top).

Thus, it would have been *prima facie* obvious to use the method of Queen *et al.* with the CDRs of Beeler *et al.* with the expectation of success in producing a human-murine neutralizing antibody against RSV which is specific for the A or C antigenic sites of the F protein.

Conclusion

No claim is allowed.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myron G. Hill whose telephone number is 571-272-0901. The examiner can normally be reached on 9am-6pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 571-272-0902. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Myron G. Hill
Patent Examiner
April 14, 2004

JEFFREY STUCKER
PRIMARY EXAMINER